DARK ENERGY
SURVEY

PreCam Exposure Times

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DES-Calib/PreCam Telecon

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The Equation

$$S/N = N_* / sqrt(N_* + N_{sky})$$

where

N_* and N_{sky} are in # of detected electrons.

(Readnoise and dark current are ignored.)

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Original Estimates (2009)

Baseline PreCam Survey Point-Source Magnitude Limits (optimized to achieve S/N=50 at DES saturation + 1.5mag)

Band	Exposure time [seconds]	PreCam saturation limit	PreCam mag limit S/N=50	Number of usable stars per sq deg (SGP)
g	36	12.8	17.8	186
r	51	13.2	17.8	265
i	65	13.4	17.7	344
z	162	14.1	17.5	317
Y	73	11.6	14.3	150

PreCam on Curtis-Schmidt with Original Folding Flat (50% Vignetting)

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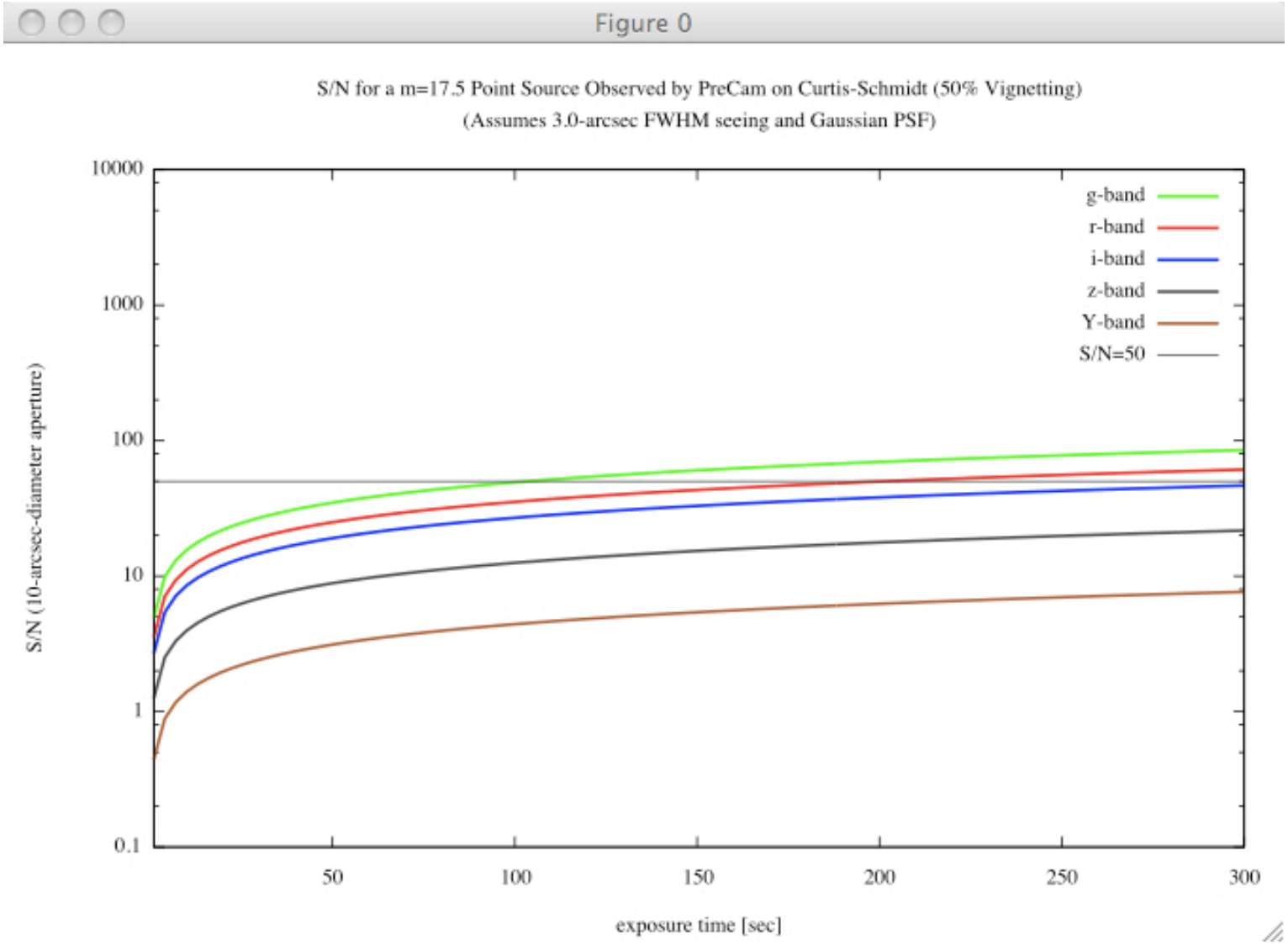

PreCam on Curtis-Schmidt with Original Folding Flat (50% Vignetting)

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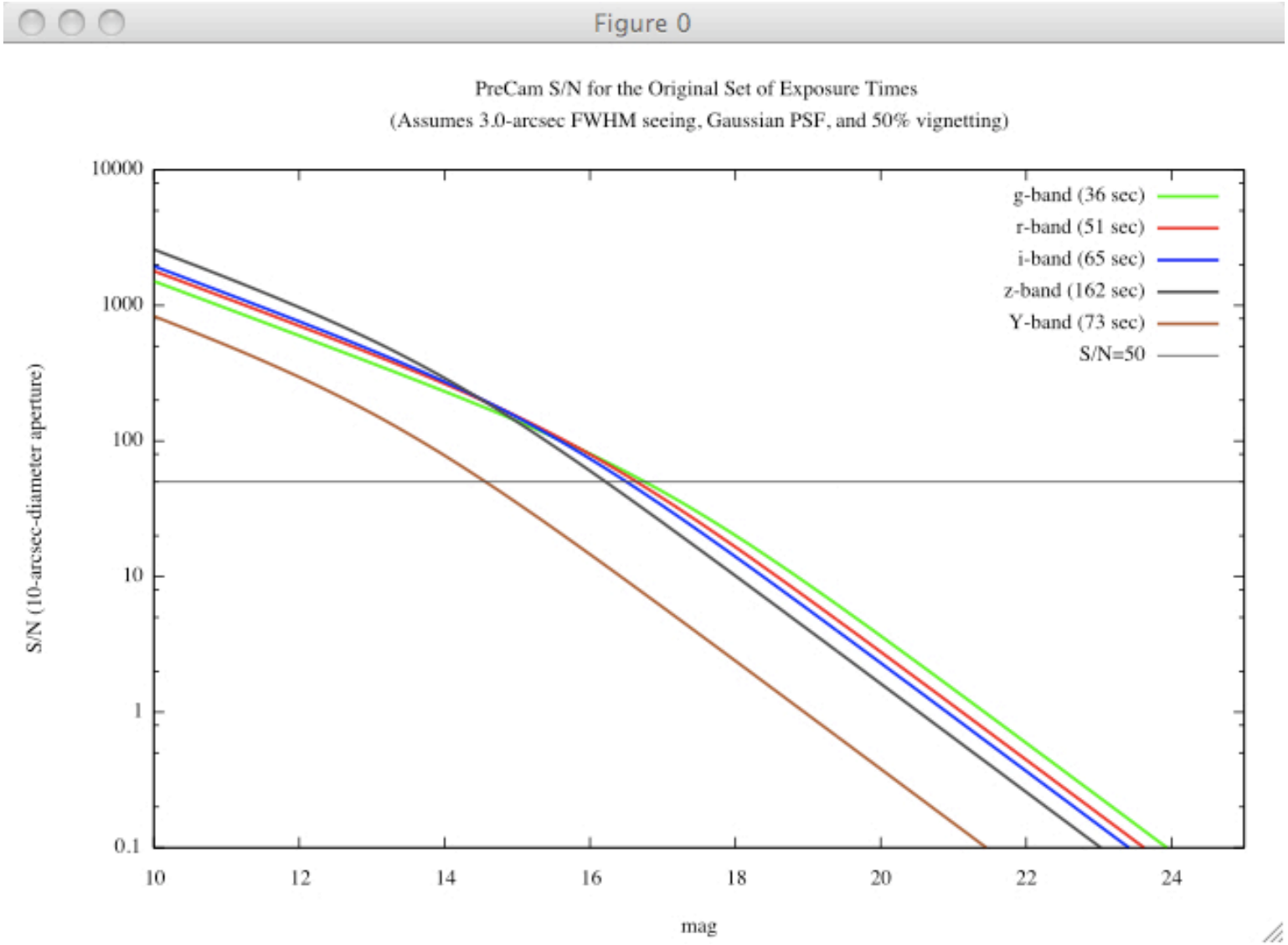

PreCam on Curtis-Schmidt with New Folding Flat (0% Vignetting)

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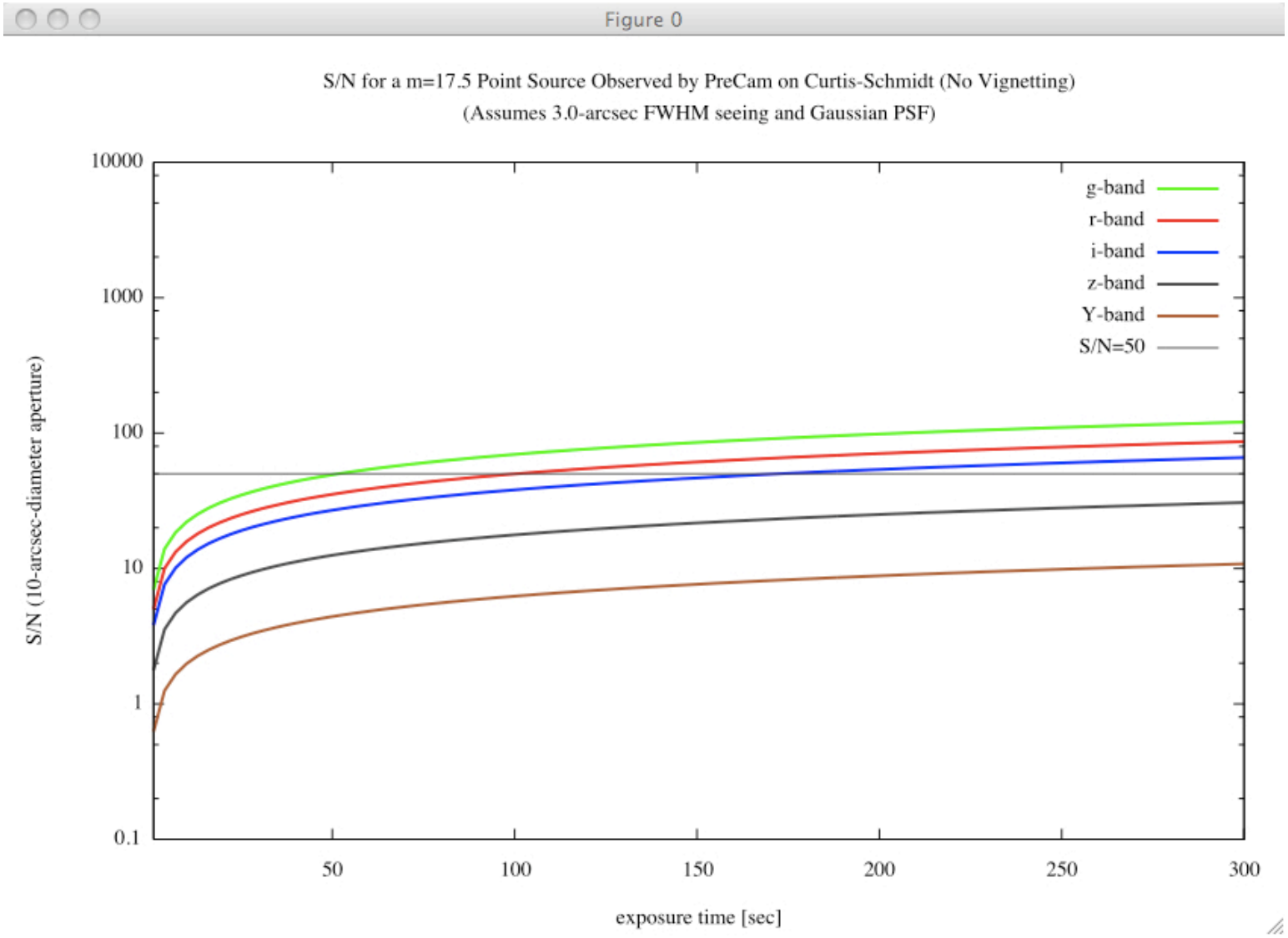

PreCam on Curtis-Schmidt with New Folding Flat (0% Vignetting)

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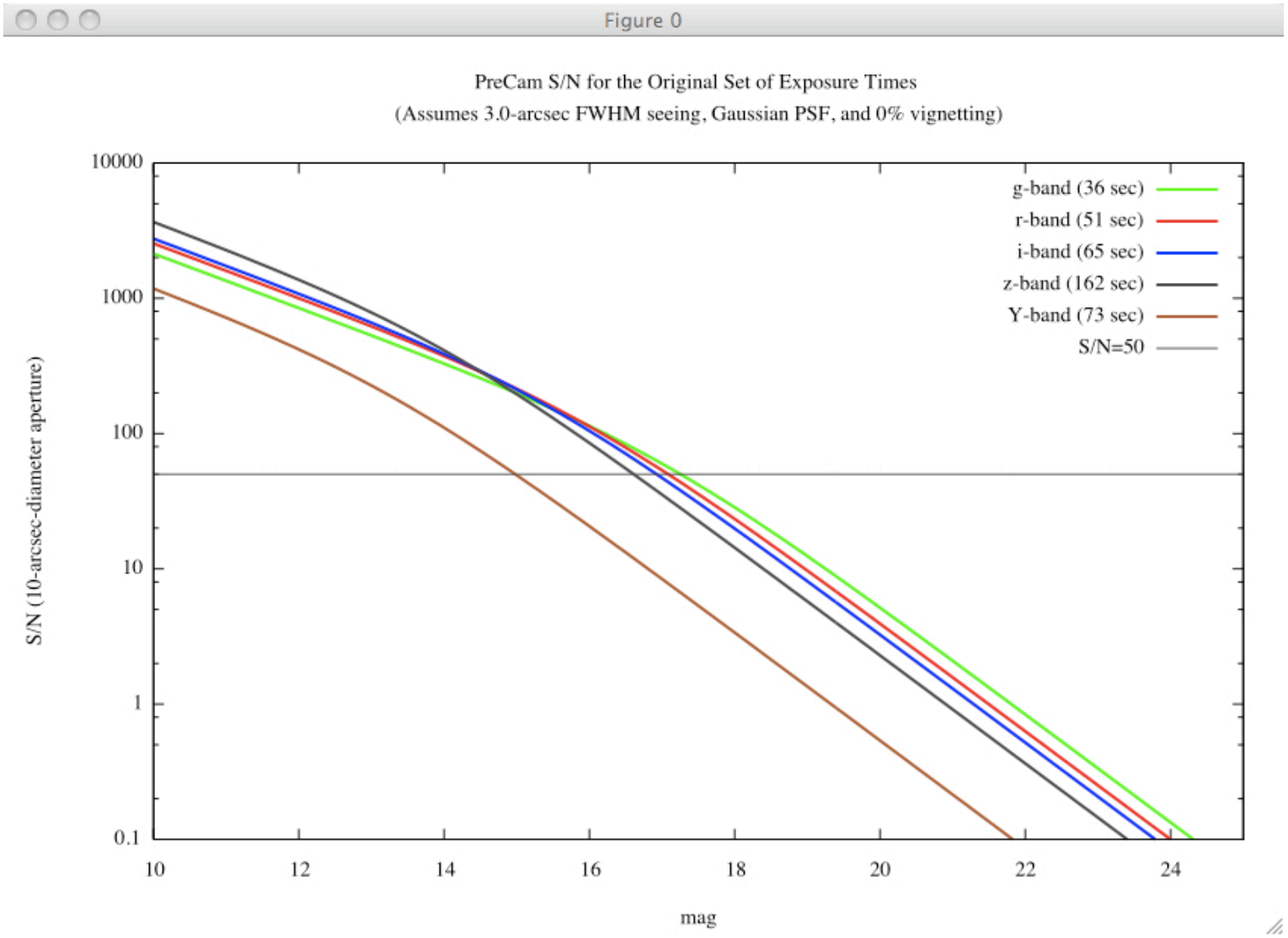

PreCam on CTIO/SMARTS 1m (0% Vignetting)

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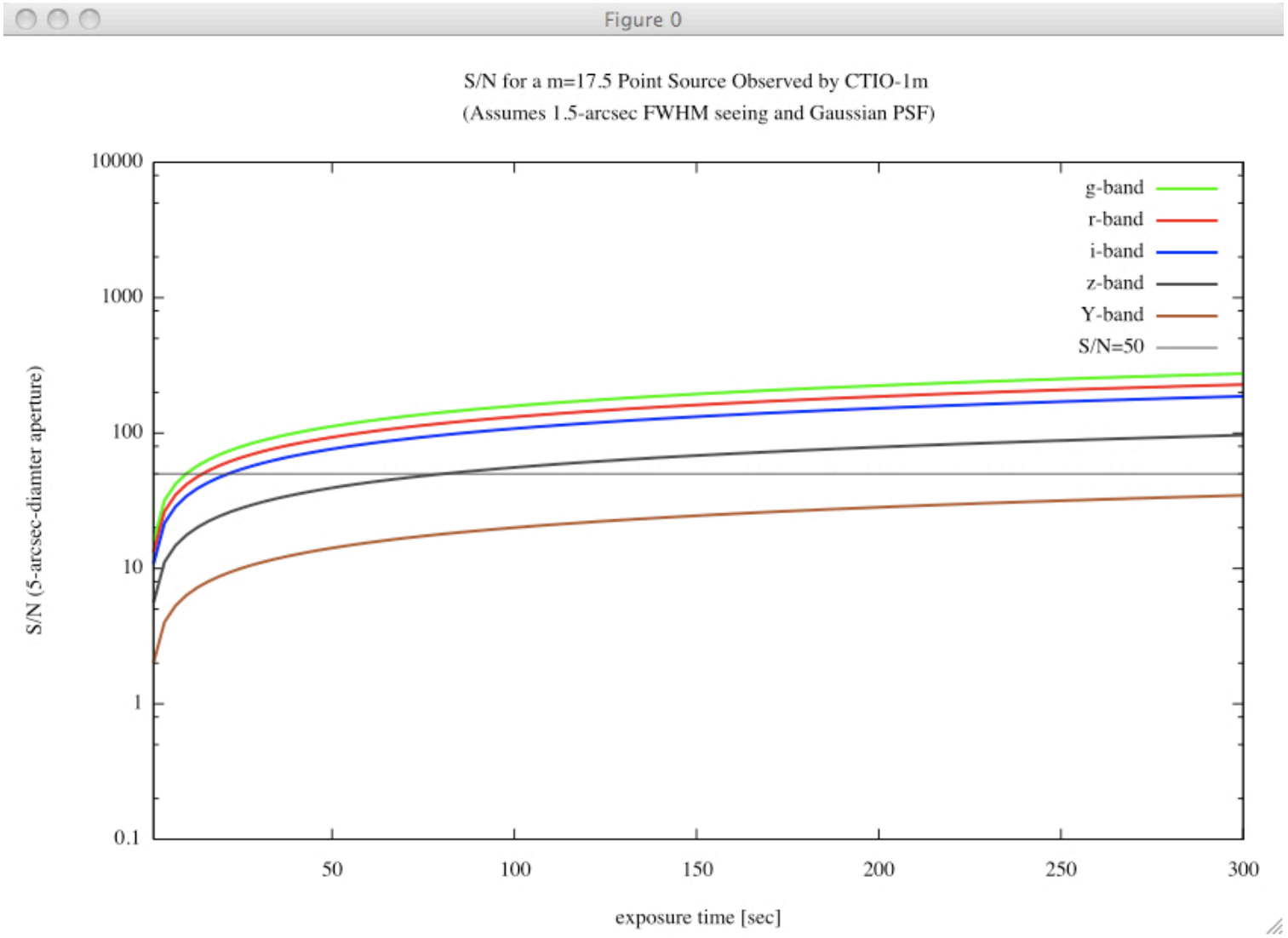

PreCam on CTIO/SMARTS 1m (0% Vignetting)

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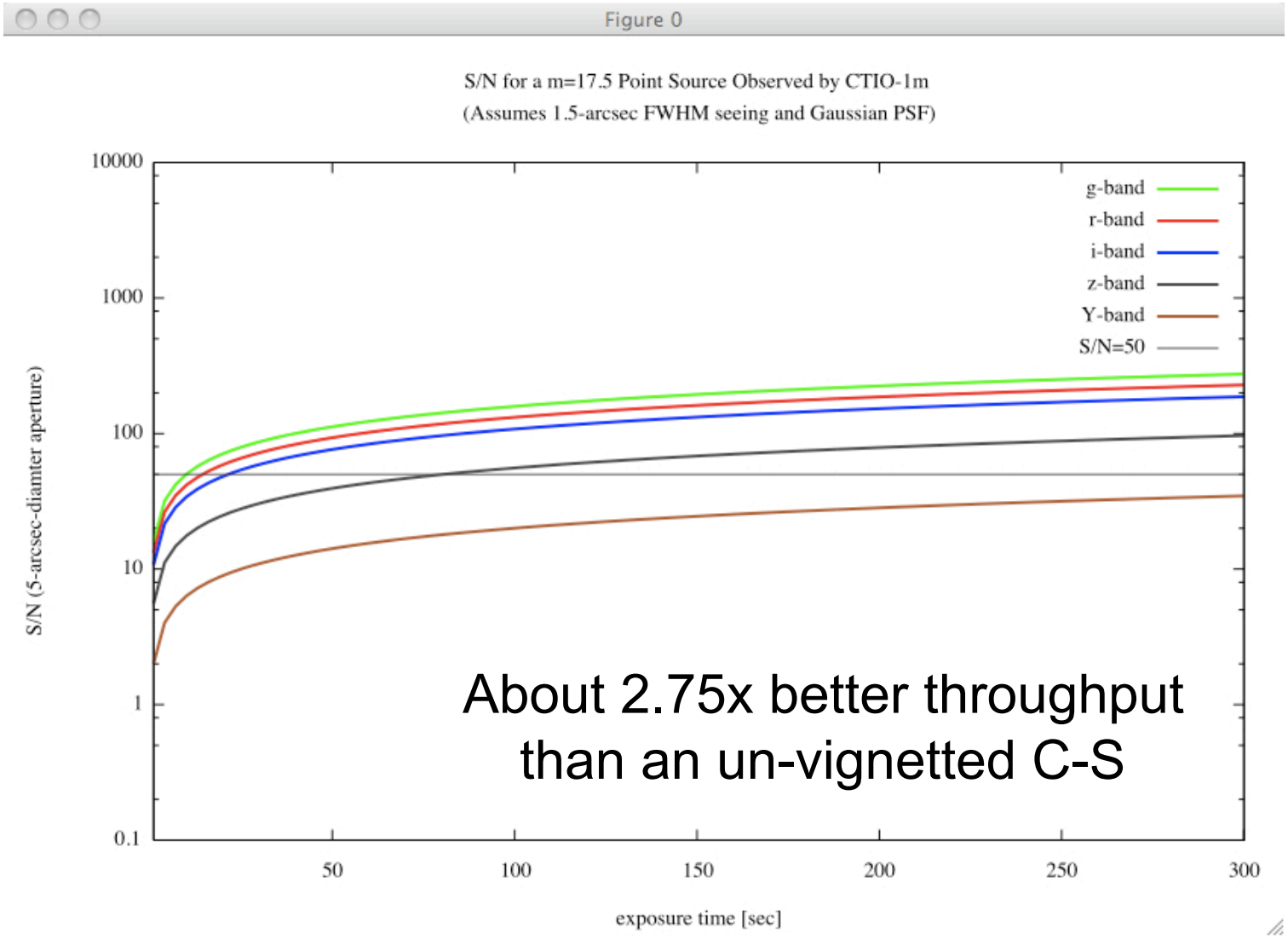

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Extra Slides